

AMENDMENTS TO THE CLAIMS

Claim 1. (currently amended) A method for using a plurality of transmission lines of a digital bus having a plurality of transmission lines operable in a first connection mode and a second connection mode, comprising the steps of:

forming a first transmission line using said first connection mode with the first transmission line being adapted to transmit data sent out from one of plural electronic apparatuses coupled to the digital bus so as to be receivable by all other electronic apparatus,

forming a second transmission line using said second connection mode with the second transmission line being adapted to transmit data between only two predetermined electronic apparatus and said second line not communicating data transmitted from electronic apparatus other than said predetermined electronic apparatus ,

pre-selecting the plurality of transmission lines of the digital bus into groups before any transmission lines among the plurality of transmission lines is formed, said groups including a first group that transmits data only in said first connection mode, and a second group that transmits data only in said second connection mode,

classifying said plurality of electronic apparatus connected to said digital bus into groups including a first group that receives data substantially through a transmission line of said first connection mode and a second group that receives data substantially through a transmission line of said second connection mode, wherein the plurality of electronic apparatus connected to said digital bus are classified into the first and second groups by inquiring whether each electronic apparatus connected to said digital bus includes a monitor apparatus to display a supplied signal; and

assigning some of said plurality of transmission lines to said first connection mode based on the status of whether a default channel for an electronic apparatus having said monitor apparatus is used or occupied by another apparatus and the remaining transmission lines to the second connection mode.

Claim 2. (previously presented) The method of claim 1, wherein a plurality of transmission lines are secured for said first connection mode correspondingly to the number of said first receiving apparatus connected to said digital bus.

Claim 3. (previously presented) The method of claim 1, wherein, in the case that said first receiving apparatus functions to receive data through another transmission line while said first receiving apparatus is receiving data through one transmission line, a plurality of transmission lines are secured for said first connection mode correspondingly to the number of said first receiving apparatus obtained on the assumption that there is said first receiving apparatus on every receivable transmission line.

Claim 4. (currently amended) A method for using a plurality of transmission lines of a digital bus having said plurality of transmission lines operable in a first connection mode and a second connection mode, comprising the steps of:

forming a first transmission line using said first connection mode with the first transmission line being adapted to transmit data sent out from one of plural electronic apparatuses coupled to the digital bus so as to be receivable by all other electronic apparatuses,

forming a second transmission line using said second connection mode with the second transmission line being adapted to transmit data between only two predetermined electronic apparatuses and not accepting data transmitted from electronic apparatus other than said predetermined electronic apparatuses ,

pre-selecting the plurality of transmission lines of the digital bus into groups before any transmission lines among the plurality of transmission lines is formed said groups including a first group that transmits data only in said first connection mode, and a second group that transmits data only in said second connection mode,

classifying said plurality of electronic apparatus connected to said digital bus into groups including a first group that receives data substantially through a transmission line of said first connection mode and a second group that receives data substantially through a transmission line of said second connection mode, wherein the plurality of electronic apparatus connected to said digital bus are classified into the first and second groups by inquiring whether each electronic apparatus connected to said digital bus includes a monitor apparatus to display a supplied signal; and

assigning a transmission line of said first connection mode to each of said first receiving apparatus that receive data substantially through a transmission line of said first connection mode with one-to-one correspondence and based on the status of whether a default channel for an electronic apparatus having said monitor apparatus is used or occupied by another apparatus.

Claim 5. (previously presented) The method of claim 4, wherein said plurality of transmission lines comprises:

a transmission line of said first connection mode is previously set to each said first receiving apparatus, and

a transmission line different from said previously set transmission line is allocated to said first transmission apparatus when data that said first receiving apparatus cannot process is found on the previous set transmission line of said first receiving apparatus.

Claim 6. (previously presented) The method of claim 4, wherein one of said plurality of transmission lines, when the transmission line that is to be allocated to said first receiving apparatus is exclusively occupied by another apparatus, the transmission line that is to be allocated to said first receiving apparatus is changed.

Claim 7. (previously presented) The method of claim 6, wherein said plurality of transmission lines comprises:

a transmission line of said first connection mode is previously set to each of said first receiving apparatus,

each setting information of said first receiving apparatus connected to said digital bus is referred, and

when the transmission line that is to be allocated to said first receiving apparatus has been already allocated to another electronic apparatus, the transmission line is regarded as exclusively occupied by another electronic apparatus, and the transmission line that is to be allocated to the first receiving apparatus is changed.

Claim 8. (previously presented) The method of claim 1, wherein an electronic apparatus that detects the necessity to classify the electronic apparatus into said first receiving apparatus and said second receiving apparatus and the necessity to secure the transmission line performs classification of the electronic apparatus into said first receiving apparatus and said second receiving apparatus and secures the transmission line.

Claim 9. (previously presented) The method of claim 1, wherein a predetermined electronic apparatus out of the electronic apparatus connected to said digital bus classifies the electronic apparatus into said first receiving apparatus and said second receiving apparatus and secures the transmission line, and

when said predetermined electronic apparatus detects the necessity to classify the electronic apparatus into said first receiving apparatus and said second receiving apparatus and the necessity to secure the transmission line, said predetermined electronic apparatus performs classification of the electronic apparatus into said first receiving apparatus and said second receiving apparatus and securing of the transmission line.

Claim 10. (previously presented) The method of claim 8, wherein, the necessity to classify the electronic apparatus into said first receiving apparatus and said second electronic apparatus and to secure the transmission line are recognized when attaching of an electronic apparatus to said digital bus or detaching of an electronic apparatus from said digital bus are detected, and the electronic apparatus is classified into said first receiving apparatus and said second electronic apparatus and the transmission line is secured.

Claim 11. (previously presented) The method of claim 8, wherein a necessity to classify the electronic apparatus into said first receiving apparatus and said second electronic apparatus and to secure the transmission line is recognized when an instruction is given by a user, and

the electronic apparatus is classified into said first receiving apparatus and said second electronic apparatus and the transmission line is secured.

Claim 12. (previously presented) The method of claim 1, wherein:

said second receiving apparatus, when said second receiving apparatus receives a supply of data from a target electronic apparatus connected to said digital bus, forms a transmission line of said second connection mode avoiding the transmission line that has been secured as the transmission line of said first connection mode, and receives said supply of data through the formed transmission line, and

when said second receiving apparatus receives supply of data transmitted through the transmission line of said first connection mode of said digital bus, said second receiving apparatus forms a transmission line of said first connection mode used for transmission of data, and receives said supply of data.

Claim 13. (previously presented) The method of claim 12, wherein, when said second receiving apparatus is to receive a supply of data that is being transmitted through the transmission line of said first connection mode, then through a transmission line of said second connection mode, said second receiving apparatus specifies a sender of data transmitted through the transmission line of said first connection mode as said target electronic apparatus that

supplies data to this apparatus, and forms a transmission line of said second connection mode between said second receiving apparatus and the specified electronic apparatus.

Claim 14. (previously presented) The method of claim 12, wherein, when said second receiving apparatus is to receive supply of data from the target electronic apparatus, said second receiving apparatus accepts a selection input entered by a user to select a sender electronic apparatus from among said plurality of electronic apparatus connected to said digital bus, specifies said target electronic apparatus that supplies data to this apparatus correspondingly to said selection input, and forms a transmission line of said second connection mode between said second receiving apparatus and the specified electronic apparatus.

Claim 15. (previously presented) The method of claim 1, wherein a sending out apparatus that is an electronic apparatus for sending out data to said digital bus is capable of sending out data through both a transmission line connected in said first connection mode and a transmission line connected in said second connection mode.

Claim 16. (previously presented) The method of claim 1, wherein a sending out apparatus that is an electronic apparatus for sending out data to said digital bus is connected to a secured transmission line of said first connection mode and sends out data when an instruction input entered by a user instructing that data be sent out to a transmission line connected in said first connection mode is accepted.

Claim 17. (previously presented) The method of claim 1, wherein an electronic apparatus connected to said digital bus changes a secured transmission line of said first connection mode when the necessity for changing said secured transmission line of said first connection mode.

Claim 18. (previously presented) The method of claim 17, wherein an electronic apparatus connected to said digital bus changes a secured transmission line of said first connection mode when sending out of data that cannot be processed by mean of said first receiving apparatus to said secured transmission line of said first connection mode is detected.

Claim 19. (previously presented) The method of claim 17, wherein an apparatus connected to said digital bus changes a transmission line of said first connection mode secured for said first receiving apparatus when the change of secured transmission line of said first connection mode is instructed by a user.

Claim 20. (previously presented) The method of claim 1, wherein said digital bus is the IEEE 1394 standard digital serial interface.

Claim 21. (currently amended) An information transmission system comprising:
a plurality of electronic apparatus respectively coupled to a digital bus having a plurality of transmission lines;
each transmission line being predetermined to operate in a first connection mode and a second connection mode; said plurality of transmission lines comprising:

at least one transmission line operating in said first connection mode that transmits data sent out from one electronic apparatus so as to be receivable for all other electronic apparatus connected to said digital bus,

at least one transmission line operating in said second connection mode that transmits data between only two predetermined electronic apparatuses and does not accept data transmitted from other electronic apparatuses,

wherein the connection mode of each transmission line is pre-selected before one of said connection modes is established,

at least one electronic apparatus among said plurality of electronic apparatus connected to said digital bus comprising:

apparatus classification means for categorizing said plurality of electronic apparatus connected to said digital bus into a first receiving apparatus that receives data substantially through a transmission line of said first connection mode and a second receiving apparatus that receives data substantially through a transmission line of said second connection mode; wherein the plurality of electronic apparatus connected to said digital bus are categorized into first and second receiving apparatus by inquiring whether each electronic apparatus connected to said digital bus includes a monitor apparatus to display a supplied signal; and

transmission line securing means for securing some of said plurality of transmission lines for said first connection mode based on the status of whether a default channel for an electronic apparatus having said monitor apparatus is used or occupied by another apparatus and for allocating the remaining transmission lines for said second connection mode.

Claim 22. (previously presented) The information transmission system as claimed in claim 21, wherein said transmission line securing means of said electronic apparatus secures a plurality of transmission lines for said first connection mode correspondingly to the number of said first receiving apparatus connected to said digital bus.

Claim 23. (previously presented) The information transmission system as claimed in claim 21, wherein, in the case that said first receiving apparatus functions to receive data through another transmission line while said first receiving apparatus is receiving data through one transmission line, said transmission line securing means of said electronic apparatus secures a plurality of transmission lines for said first connection mode correspondingly to the number of said first receiving apparatus obtained on the assumption that there is said first receiving apparatus on every receivable transmission line.

Claim 24. (currently amended) An information transmission system formed by connecting a plurality of electronic apparatus to a digital bus having a plurality of transmission lines with each line capable of selecting among a first connection mode and a second connection mode to form a transmission line comprising:

at least one transmission line, operating in said first connection mode, that transmits data sent out from one electronic apparatus so as to be receivable for all other electronic apparatus connected to said digital bus,

at least one transmission line, operating in said second connection mode that transmits data between only two predetermined electronic apparatuses and does not accept data transmitted from other electronic apparatuses ,

at least one electronic apparatus connected to said digital bus comprising:

apparatus classification means for categorizing said plurality of electronic apparatus connected to said digital bus into a first receiving apparatus that receives data substantially through a transmission line of said first connection mode and a second receiving apparatus that receives data substantially through a transmission line of said second connection mode at a predetermined timing; wherein the plurality of electronic apparatus connected to said digital bus are categorized into first and second receiving apparatus by inquiring whether each electronic apparatus connected to said digital bus includes a monitor apparatus to display a supplied signal; and

transmission line securing means for securing a transmission line of said first connection mode for each of said first receiving apparatus that receive data substantially through a transmission line of said first connection mode and based on the status of whether a default channel for an electronic apparatus having said monitor apparatus is used or occupied by another apparatus; and for allocating the transmission lines other than said transmission line secured for said first connection mode to said second connection mode.

Claim 25. (previously presented) The information transmission system as claimed in claim 24, wherein:

a transmission line of said first connection mode is previously set to each said first receiving apparatus, and

said transmission line securing means of said electronic apparatus allocates a transmission line different from said previously set transmission line to said first transmission apparatus when data that said first receiving apparatus cannot process is found on the previous set transmission line of said first receiving apparatus.

Claim 26. (previously presented) The information transmission system as claimed in claim 24, wherein said transmission line securing means of said electronic apparatus changes the transmission line that is to be allocated to said first receiving apparatus when the transmission line is exclusively occupied by another apparatus.

Claim 27. (previously presented) The information transmission system as claimed in claim 26, wherein:

a transmission line of said first connection mode is previously set to each of said first receiving apparatus,

said transmission line securing means of said electronic apparatus refers each setting information of said first receiving apparatus connection to said digital bus, and

when the transmission line that is to be allocated to said first receiving apparatus has been already allocated to another electronic apparatus, changes the transmission line that is to be allocated to the first receiving apparatus.

Claim 28. (previously presented) The information transmission system as claimed in claim 21, wherein:

there is provided detection means for detecting the necessity to classify the electronic apparatus into said first receiving apparatus and said second receiving apparatus and the necessity to secure a transmission line among said plurality of transmission lines,

said electronic apparatus classification means of said electronic apparatus classifies the electronic apparatus when said detection means detects the necessity to classify the electronic apparatus into said first receiving apparatus and said second receiving apparatus and the necessity to secure the transmission line, and

said transmission line securing means of said electronic apparatus secures a transmission line when said detection means detects the necessity to classify the electronic apparatus into said first receiving apparatus and said second receiving apparatus and the necessity to secure the transmission line.

Claim 29. (previously presented) The information transmission system as claimed in claim 21, wherein:

an electronic apparatus comprising said apparatus classification means and said transmission line securing means is a predetermined electronic apparatus out of said plurality of electronic apparatus connected to said digital bus,

said predetermined electronic apparatus comprises said detection means for detecting the necessity to classify the electronic apparatus into said first receiving apparatus and said second receiving apparatus and the necessity to secure a transmission line,

said electronic apparatus classification means of said predetermined electronic apparatus classifies the apparatus when said detection means detects the necessity to classify the electronic apparatus into said first receiving apparatus and said second receiving apparatus and the necessity to secure a transmission line, and

said transmission line securing means of said predetermined electronic apparatus secures a transmission line when said detection means detects the necessity to classify the electronic apparatus into said first receiving apparatus and said second receiving apparatus and the necessity to secure a transmission line.

Claim 30. (previously presented) The information transmission system as claimed in claim 28, wherein said detection means of said electronic apparatus detects attaching of an electronic apparatus to said digital bus or detaching of an electronic apparatus from said digital bus.

Claim 31. (previously presented) The information transmission system as claimed in claim 28, wherein said detection means of said electronic apparatus detects an execution instruction input entered by a user that instructs the classification of the electronic apparatus into said first receiving apparatus and said second receiving apparatus and that instructs securing of a transmission line.

Claim 32. (previously presented) The information transmission system as claimed in claim 21, wherein said second receiving apparatus comprises:

transmission line forming means for forming a transmission line of said second connection mode avoiding the transmission line that has been secured as the transmission line of said first connection mode when said second receiving apparatus receives supply of data from a target electronic apparatus connected to said digital bus; and

connection means for connecting to a transmission line of said first connection mode used for transmission of data when said second receiving apparatus receives supply of data transmitted through the transmission line of said first connection mode of said digital bus.

Claim 33. (previously presented) The information transmission system as claimed in claim 32, wherein:

said second receiving apparatus comprises a transmission apparatus specifying means for specifying the sender of data transmitted through the transmission line of said first connection mode as said target electronic apparatus that supplies data to this apparatus when said second receiving apparatus is to receive a supply of data that is being transmitted through the transmission line of said first connection mode, then through a transmission line of said second connection mode, and

said transmission line forming means forms a transmission line of said second connection mode between said second receiving apparatus and the specified electronic apparatus.

Claim 34. (previously presented) The information transmission system as claimed in claim 32, wherein:

said second receiving apparatus comprises apparatus selection input accepting means for accepting a selection input entered by a user to select an sender electronic apparatus from among

said plurality of electronic apparatus connected to said digital bus when said second receiving apparatus is to receive supply of data from the target electronic apparatus, and

said transmission line forming means forms a transmission line of said second connection mode between said second receiving apparatus and the electronic apparatus instructed according to the apparatus selection input accepted by means of said apparatus selection input accepting means.

Claim 35. (previously presented) The information transmission system as claimed in claim 21, wherein a sending out apparatus that is an electronic apparatus for sending out data to said digital bus comprises data sending out means that is capable of sending out data through both a transmission line connected in said first connection mode and a transmission line connected in said second connection mode.

Claim 36. (previously presented) The information transmission system as claimed in claim 35, wherein:

said sending out apparatus comprises an instruction input accepting means for accepting an instruction input entered by a user instructing that data is sent out to a transmission line connected in said first connection mode, and

said data sending out means sends out data to a transmission line of said first connection mode when said data sending means accepts an instruction input entered by a user through said instruction input accepting means.

Claim 37. (previously presented) The information transmission system as claimed in claim 21, wherein an electronic apparatus connected to said digital bus comprises:

changing necessity detection means for detecting the necessity to change the transmission line secured for said first receiving apparatus, and

transmission line changing means for changing the transmission line of said first connection mode secured for said first receiving apparatus when said changing necessity detection means detects the necessity to change the transmission line secured for said first receiving apparatus.

Claim 38. (previously presented) The information transmission system as claimed in claim 37, wherein said changing necessity detection means detects the necessity to change the transmission line secured for said first receiving apparatus when data that cannot be processed by mean of said first receiving apparatus is being sent to the transmission line secured for said first receiving apparatus.

Claim 39. (previously presented) The information transmission system as claimed in claim 37, wherein:

change instruction input accepting means for accepting a change instruction input entered by a user for changing the transmission line, and

said changing necessity detection means detects the necessity to change the transmission line secured for said first receiving apparatus when a change instruction input is accepted through said changing instruction input accepting means.

Claim 40. (previously presented) The information transmission system as claimed in claim 21, wherein said digital bus is the IEEE 1394 standard digital serial interface.

Claim 41. (currently amended) An electronic apparatus connected to a digital bus having a plurality of transmission lines operable in a first connection mode and a second connection mode wherein in said first connection mode, a first transmission line that transmits data sent out from one electronic apparatus so as to be receivable for all other electronic apparatus connected to said digital bus is formed, and in said second connection mode, a second transmission line that transmits data between only two predetermined electronic apparatuses and does not accept data transmitted from other electronic apparatus is formed, said electronic apparatus comprise:

apparatus classification means for categorizing each of said plurality of electronic apparatus connected to said digital bus into a first receiving apparatus that receives data substantially through a transmission line of said first connection mode and a second receiving apparatus that receives data substantially through a transmission line of said second connection mode, wherein the plurality of electronic apparatus connected to said digital bus are categorized into first and second receiving apparatus by inquiring whether each electronic apparatus connected to said digital bus includes a monitor apparatus to display a supplied signal; and

transmission line securing means for securing some of said plurality of transmission lines for said first connection mode based on the status of whether a default channel for an electronic apparatus having said monitor apparatus is used or occupied by another apparatus and for allocating the remaining transmission lines of said digital bus to said second connection mode;

wherein the connection mode of each transmission line is pre-selected before the transmission lines are formed.

Claim 42. (previously presented) The electronic apparatus as claimed in claim 41, wherein said transmission line securing means secures a plurality of transmission lines for said first connection mode correspondingly to the number of said first receiving apparatus connected to said digital bus.

Claim 43. (previously presented) The electronic apparatus as claimed in claim 41, wherein, in the case that said first receiving apparatus functions to receive data through another transmission line while said first receiving apparatus is receiving data through one transmission line, said transmission line securing means secures a plurality of transmission lines for said first connection mode correspondingly to the number of said first receiving apparatus obtained on the assumption that there is said first receiving apparatus on every receivable transmission line.

Claim 44. (currently amended) An electronic apparatus connected to a digital bus having a plurality of transmission lines operable in a first connection mode and second connection mode wherein in said first connection mode, at least one transmission line that transmits data sent out from one electronic apparatus so as to be receivable for all other electronic apparatus connected to said digital bus is formed, and in said second connection mode, at least one transmission line that transmits data between only two predetermined electronic apparatuses and does not accept data transmitted from any other electronic apparatus is formed, said electronic apparatus connected to said digital bus comprises:

apparatus classification means for categorizing said plurality of electronic apparatus connected to said digital bus into a first receiving apparatus that receives data substantially through a transmission line of said first connection mode and a second receiving apparatus that receives data substantially through a transmission line of said second connection mode at predetermined timing periods; wherein the plurality of electronic apparatus connected to said digital bus are categorized into first and second receiving apparatus by inquiring whether each electronic apparatus connected to said digital bus includes a monitor apparatus to display a supplied signal; and

transmission line securing means for securing a transmission line of said first connection mode for each of said first receiving apparatus that receives data substantially through a transmission line of said first connection mode and based on the status of whether a default channel for an electronic apparatus having said monitor apparatus is used or occupied by another apparatus; and for allocating the remaining transmission lines of said digital bus to said second connection mode;

wherein the connection mode of each transmission line is pre-selected before being formed.

Claim 45. (previously presented) The electronic apparatus as claimed in claim 44, wherein:

transmission line of said first connection mode is previously set to each said first receiving apparatus, and

said transmission line securing means allocates a transmission line different from said previously set transmission line to said first transmission apparatus when data that said first

receiving apparatus cannot process is found on the previous set transmission line of said first receiving apparatus.

Claim 46. (previously presented) The electronic apparatus as claimed in claim 44, wherein said transmission line securing means changes the transmission line that is to be allocated to said first receiving apparatus when the transmission line that is to be allocated to said first receiving apparatus is exclusively occupied by another apparatus.

Claim 47. (previously presented) The electronic apparatus as claimed in claim 46, wherein:

a transmission line of said first connection mode is previously set to each of said first receiving apparatus,

said transmission line securing means refers each setting information of said first receiving apparatus connection to said digital bus, and when the transmission line that is to be allocated to said first receiving apparatus has been already allocated to another electronic apparatus, changes the transmission line that is to be allocated to the first receiving apparatus.

Claim 48. (previously presented) The electronic apparatus as claimed in claim 41, wherein:

there is provided first detection means for detecting the necessity to classify the electronic apparatus into said first receiving apparatus and said second receiving apparatus and the necessity to secure the transmission line,

said electronic apparatus classification means classifies the electronic apparatus when said first detection means detects the necessity to classify the electronic apparatus into said first receiving apparatus and said second receiving apparatus and the necessity to secure the transmission line, and

said transmission line securing means secures a transmission line when said first detection means detects the necessity to classify the electronic apparatus into said first receiving apparatus and said second receiving apparatus and the necessity to secure the transmission line.

Claim 49. (previously presented) The electronic apparatus as claimed in claim 48, wherein said first detection means detects the attaching of an electronic apparatus to said digital bus or detaching of an electronic apparatus from said digital bus.

Claim 50. (previously presented) The electronic apparatus as claimed in claim 48, wherein said first detection means of said electronic apparatus detects an execution instruction input for instructing classification of the electronic apparatus into said first receiving apparatus and said second electronic apparatus and securing a transmission line.

Claims 51-76. (canceled)